

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently amended) A method for obtaining ~~archaeobacterial DNA~~ at least one archaeal polymerase and/or at least one archaeal polymerase fragment having polymerase activity from a sample, said method comprising:

fractionating a sample comprising at least one ~~archaeobacterial DNA~~ archaeal polymerase and/or at least one archaeal polymerase fragment having polymerase activity using Poly U Sepharose chromatography; and

obtaining at least one substantially pure ~~archaeobacterial DNA~~ archaeal polymerase and/or archaeal polymerase fragment having polymerase activity.

2. (Currently amended) A method of claim 1 wherein the sample fractionated by Poly U Sepharose chromatography is obtained from a prior fractionation of an initial sample comprising at least one ~~archaeobacterial DNA~~ archaeal polymerase and/or at least one archaeal polymerase fragment having polymerase activity.

3. (Withdrawn) A method of claim 1 wherein the sample fractionated by Poly U Sepharose chromatography is obtained from a prior chromatography of an initial sample comprising at least one DNA polymerase.

4. (Withdrawn) A method of claim 3 wherein the prior chromatography comprises hydrophobic chromatography.

5. (Withdrawn) A method of claim 3 wherein the prior chromatography comprises affinity chromatography.
6. (Withdrawn) A method of claim 3 wherein the prior chromatography comprises use of a matrix with heparin.
7. (Withdrawn) A method of claim 6 wherein the prior chromatography comprises use of Heparin Sepharose chromatography.
8. (Withdrawn) A method of claim 3 wherein the prior chromatography comprises use of a matrix with a dye-binding material.
9. (Withdrawn) A method of claim 8 wherein the prior chromatography comprises use of Blue Sepharose chromatography.
10. (Currently amended) The method of claim 1 wherein the at least one substantially pure ~~archaebacterial DNA~~ archaeal polymerase and/or archaeal polymerase fragment having polymerase activity is at least about 95% homogeneous.
11. (Currently amended) The method of claim 1 wherein the at least one substantially pure ~~archaebacterial DNA~~ archaeal polymerase and/or archaeal polymerase fragment having polymerase activity is at least about 85-90% homogeneous.
12. (Currently amended) The method of claim 1 wherein the at least one substantially pure ~~archaebacterial DNA~~ archaeal polymerase and/or archaeal

polymerase fragment having polymerase activity is at least about 75-85% homogeneous.

13. (Currently amended) The method of claim 1 wherein the sample comprises cells that comprise a recombinant expression vector capable of expressing an ~~archaebacterial-DNA~~ archaeal polymerase or archaeal polymerase fragment having polymerase activity.

14. (Original) The method of claim 13 wherein the cells are bacterial, yeast, mammalian, or insect cells.

15. (Original) The method of claim 1 wherein the sample comprises archaebacterial cells.

16. (Canceled)

17. (Currently amended) The method of claim 1 wherein the at least one substantially pure ~~archaebacterial-DNA~~ archaeal polymerase and/or archaeal polymerase fragment having polymerase activity is *Pfu* DNA polymerase I and/or a fragment thereof having polymerase activity.

18. (Currently amended) The method of claim 1 wherein the at least one substantially pure ~~archaebacterial-DNA~~ archaeal polymerase and/or archaeal polymerase fragment having polymerase activity is *Pfu* DNA polymerase II and/or a fragment thereof having polymerase activity.

19. (Withdrawn) A method for obtaining substantially pure DNA polymerase comprising:
- (a) obtaining a sample comprising at least one DNA polymerase;
  - (b) fractionating the sample using hydrophobic chromatography;
  - (c) fractionating the product of (b) using Heparin Sepharose chromatography;
  - (d) fractionating the product of (c) using Blue Sepharose chromatography;
  - (e) fractionating the product of (c) Using Poly U Sepharose chromatography; and
  - (f) obtaining substantially pure DNA polymerase.
20. (Withdrawn) A composition of matter comprising a substantially pure DNA polymerase obtained from the method of claim 1 or 19.
21. (Withdrawn) The composition of claim 20 wherein the DNA polymerase is an archaeobacterial DNA polymerase.
22. (Withdrawn) The composition of claim 20 wherein the DNA polymerase is *Pfu* DNA polymerase I.
23. (Withdrawn) The composition of claim 20 wherein the DNA polymerase is *Pfu* DNA polymerase II.

24. (Withdrawn) A kit for obtaining substantially pure DNA polymerase comprising poly U chromatography resin.
25. (Withdrawn) The kit of claim 24 wherein the DNA polymerase is an archaeobacterial DNA polymerase.
26. (Withdrawn) The kit of claim 24 wherein the DNA polymerase is *Pfu* DNA polymerase.